OBJECTIVES: Iatrogenic chronic pain is increasingly recognized as a major adverse outcome after inguinal hernia repair. In order to assess chronic post-herniorrhaphy pain, we developed the 18-item Inguinal Pain Questionnaire (IPQ). The aim of the present study was to test its validity and reliability and explore the prevalence of long term pain as determined by the questionnaire in a sample from the population-based Swedish Hernia Register. **METHODS:** Validity was tested in 100 patients who received the IPQ and the Brief Pain Inventory (BPI) 1 and 4 weeks after surgery (Group A). The reliability was tested in 100 patients who received the IPQ on two occasions one month apart 3 years after operation (Group B). From the Swedish Hernia Register 2853 operated 2000 were requested to fill in IPQ by mail. **RESULTS:** As an indication of construct validity, a significant ($p < 0.001$) decrease in IPQ-rated pain intensity was observed in the first 4 weeks after surgery. Significant ($p < 0.05$) correlations with corresponding BPI pain intensity items corroborated the criterion validity. The rate of logical incoherence did not exceed 5.5% for any item. Kappa values in the test-retest one month apart in group B were higher than 0.5 for all but three items, indicating acceptable reliability. Cronbachs alpha was 0.83 for questions on pain intensity and 0.51 for interference with daily activities. After two reminders, 2456 patients (86%), in the sample from the Hernia Register had responded to the questionnaire. In response to a question about "worst perceived pain last week", 758 patients (31%) reported pain to some extent. In 144 cases (6%) the pain interfered with daily activities. **CONCLUSION:** The validity and reliability is sufficient to make IPQ a useful instrument in the routine assessment of post-herniorrhaphy pain. Disabling pain was found to be a widespread problem 3 years after surgery.

RESPIRATORY DISEASES—Clinical Outcomes Studies

PRS1

BURDEN OF CONCOMITANT ASTHMA AND COPD IN A MEDICAID POPULATION

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OBJECTIVES: Asthma and chronic obstructive pulmonary disease (COPD) present health concerns and an economic burden for patients and managed care plans. This study compares utilization outcomes in patients with COPD, asthma or co-occurring COPD and asthma in a Medicaid population. **METHODS:** We queried all medical and pharmacy claims of Medicaid patients with COPD and/or asthma filed between January 1, 20001 and December 31, 2003, from encounter data. COPD patients were identified based on at least one claim with ICD-9 codes 491, 492, 496, and asthma patients on the basis of ICD-9 code 493 as primary, secondary or tertiary diagnosis. We analyzed annual utilization attributable to COPD and/or asthma, and compared relative utilization of hospitalizations, physician, outpatient and emergency room visits as well as drug prescriptions. **RESULTS:** The analysis included a total of 3455 COPD, 3072 asthma and 2604 COPD/asthma patients, and showed statistically significant differences in the use of services. COPD/asthma co-occurring disease has higher utilization of any service type than either disease alone. Compared with asthma, COPD has higher use of hospitalizations ($p < 0.0001$), and less out-patient services ($p < 0.0001$) and outpatient-emergency visits ($p < 0.0001$). Logistic regression results suggest that COPD patients were 16%-51% more likely to use physician visits (OR = 1.16, 95% CI: 1.01–1.34) and inpatient services (OR = 1.51 95% CI: 1.31–1.74) and less likely to use out-patient services (OR = 0.40 95% CI: 0.35–0.46). COPD and asthma co-occurring patients had higher utilization of all services compared with asthma patients. **CONCLUSION:** Our data suggest that COPD and COPD/asthma co-occurring patients were sicker and used more medical services than asthma patients.

PRS2

CLINICAL OUTCOMES OF PATIENTS HOSPITALIZED WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) EXACERBATIONS IN SINGAPORE

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OBJECTIVES: To review the clinical outcomes of patients hospitalized with chronic obstructive pulmonary disease (COPD) acute exacerbations in Singapore and to describe the impact of evidence-based management programs. **METHODS:** A retrospective review was designed for COPD exacerbations patients admitted from year 2000 to 2005 in three public hospitals in Singapore. Adult patients aged 40 years and above with COPD as the primary reason for hospitalization were retrieved from computerized database. The outcomes studied included average hospital length of stay (LOS), in-hospital mortality rate and readmission rates within 15 days, 30 days and 90 days. Univariate ANOVA and Chi-square test, multivariate regression models and trend analysis were applied to generate statistical results. **RESULTS:** Among all 2996 COPD patients, 78.8% were male (95% CI: 77.3–80.3%). Chinese were about 82.4% (95% C.I.: 81.0–83.8%), Indian 6.6% (95% CI: 5.7–7.5%), and Malay 7.8% (95% CI: 6.8–8.8%). Patients aged 60 and above were the major population, taking up to 90.4% (95% CI: 89.3–91.5%). From 2000 to 2005 there were significant declines in LOS (6–3 days; $p < 0.001$), and mortality (12.1–3.7%; $p < 0.001$) rates. There were also significant reduction in readmission rates at 90 days (22.5–13.6%; $p < 0.001$) but not at 30 days (11.8–8.6%; $p = 0.076$) or 15 days (6.5–6.0%; $p = 0.218$). By multivariate regression, by controlling other factors, age is a risk factor for longer hospital LOS ($p = 0.02$). Elder patients are also more dangerous on in-hospital death ($p < 0.001$) and readmission within 90 days ($p = 0.043$). All the readmission rates for male patients were significantly higher than females ($p = 0.002$, $p < 0.001$ and $p < 0.001$ for 15, 30, and 90 days respectively). **CONCLUSION:** In summary, although the study suffers from several limitations, i.e. lack of controls, confounded by disease severity etc, it has shown that implementation of goal directed management programs in COPD patients was associated with positive trends in reduced hospitalization, hospital mortality and readmission rates.

RESPIRATORY DISEASES—Cost Studies

PRS3

DIRECT AND INCREMENTAL COSTS OF ACUTE RESPIRATORY INFECTIONS BY INITIATING ANTIBIOTIC

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OBJECTIVES: The costs of respiratory tract infections are considerable. The purpose of this study was to estimate the direct